

Appl. No. : 10/621,196
Filed : July 15, 2003

AMENDMENTS TO THE CLAIMS

IN THE CLAIMS:

A complete set of claims is provided below.

Please cancel Claims 1-38, 44, and 48-66 without prejudice.

Please amend Claims 39, 40, 41, 45 and 47 as indicated.

1.-38. (Canceled)

39. (Currently Amended) An apparatus for controlling the movement of ~~a catheter-~~
~~like an elongate surgical~~ tool to be inserted into the body of a patient, comprising;

a controllable magnetic field source having a first cluster of electromagnet poles and a second cluster of electromagnet poles, said first cluster of poles substantially opposed to said second cluster of poles;

a tool having a distal end responsive to said magnetic field;

one or more sensors configured to sense a current position of said distal end; **and**

a system controller for controlling said magnetic field source to control a movement of said distal end according to a feedback calculation wherein said system controller is configured to compute **a position error comprising** a difference between a desired position of said distal end and said current position of said distal end; ~~and a previously-computed difference between a previous position of said distal end and said desired position~~

a Virtual Tip that provides tactile feedback to an operator, wherein an amount of said tactile feedback is computed by said system controller at least in part according to said position error.

40. (Currently Amended) The apparatus of Claim 39, said distal end comprising one or more ~~ultrasound emitters~~ **piezoelectric rings**.

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41. (Currently Amended) The apparatus of Claim 39, said distal end comprising one or more ~~ultrasound emitters~~ piezoelectric rings for providing sensor data to a system controller.

42. (Original) The apparatus of Claim 39, further comprising an operator interface unit.

43. (Original) The apparatus of Claim 39, wherein said first cluster of poles is connected to said second cluster of poles by a magnetic material.

44. (Canceled)

45. (Currently Amended) The apparatus of Claim 39, further comprising:
a Virtual Tip and Calibration Fixture ~~Controller; and~~
~~a Virtual Tip assembly.~~

46. (Original) The apparatus of Claim 39, further comprising:
a communication controller;
a calibration fixture; and
one or more temperature sensors.

47. (Currently Amended) The apparatus of Claim 39 40, wherein said one or more sensors comprise one or more ~~wherein said~~ temperature sensors ~~are~~ paired with said one or more magnetic sensors.

48.-66. (Canceled)